

ABSTRACT OF THE DISCLOSURE

Etalon Enhanced Saturable Reflector for Mode-Locked Lasers

5 A Saturable Reflector apparatus comprises a substrate having a first and second surfaces, and a reflector having a saturable absorber layer, attached to the first surface. At least one of the first and second surfaces has been modified to enhance an etalon effect of the substrate due to interference of light reflecting from the first and second surfaces. Either or both of the surfaces may be modified, for example, by polishing or coating. The apparatus may also include means for adjusting an optical thickness of the substrate to tune the etalon effect. Such means may comprise a temperature control element, such as a heater, coupled to a temperature controller. The inventive apparatus may be incorporated into a mode-locked laser. The etalon tuning optimizes a relation between temporal and frequency domains of radiation incident on the saturable reflector.